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Vertical structure of horizontal currents in global eddying OGCMs

R.B. Scott (1), R. Ferrari (2), and B.K. Arbic (3)

(1) NOCS, University of Southampton, Southampton, UK(r.b.scott@soton.ac.uk), (2) Earth, Atmospheric and Planetary Sciences, MIT, Cambridge, USA (rferrari@mit.edu), (3) Dept. of Oceanography, FSU, USA (arbic@ocean.fsu.edu)

Global eddying ocean circulation models now display impressively realistic surface kinetic energy levels. However the skill in reproducing deep and abyssal flows is not as good. Comparison with thousands of current meter records at various depths and from across the World Ocean reveals that several global, high-resolution models generate too weak flows below the surface and the bias increases with depth below the surface. We explore this bias from the point of view of the model energetics and global mechanical energy budget of the ocean.